

The CHILDREN'S NEWSPAPER

AND CHILDREN'S PICTORIAL

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THE ANTS HAVE A GREAT DAY OUT

GREAT EVENT IN THE ANT WORLD

THE DAY OF LIBERTY

One of the Natural Marvels of the Year

CORONATION DAYS AND WEDDING TOURS

Now is the time for the C.N. naturalists in the North of England to be on the alert for one of the most interesting natural marvels of the year.

Ant queens are leaving their subterranean fortresses for their one and only day of light and liberty, to make their wedding tour; then to return to the blackness and mystery of the underworld from which they issued, and be no more seen by human eyes. The season is later in the north than it is in the south, so the great flights should continue for some considerable time yet, and afford feasts of wonder to observers.

Teeming Life of an Ant Nest

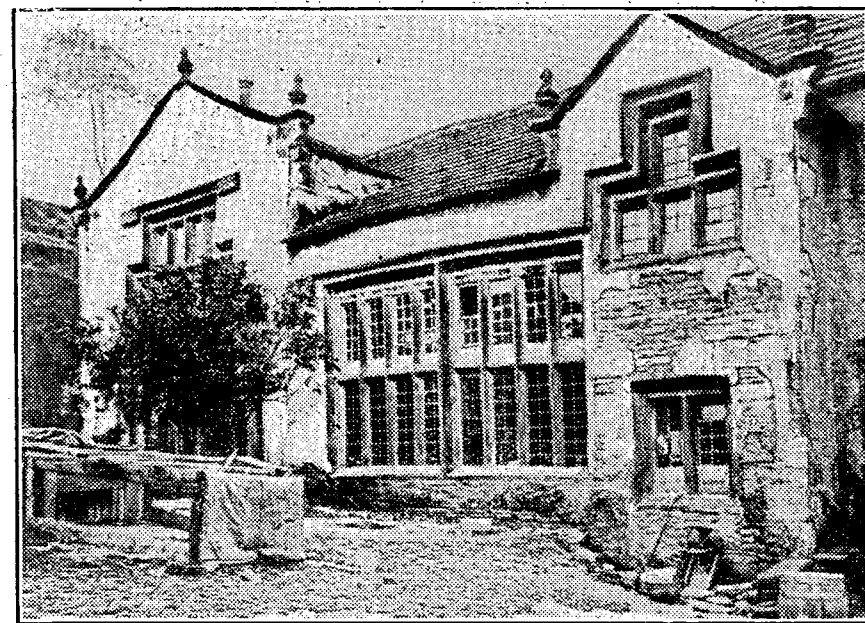
The coronation day of certain ant kingdoms in Surrey known to the writer has come and gone. It was August 19, the first day of true summer heat for two or three weeks, and the nests suddenly flowered into teeming life, like a collection of buds bursting at once into radiant bloom.

The colonies had been carefully watched for some days, but nothing more than great activity on the part of the workers suggested that one of Nature's miracles was awaiting fulfilment within. Similar activity may well have been happening within that very nest of ants which, it is said, was partly responsible for a charabanc disaster down in a Surrey country lane. Doubtless the cold, wet, and gloom of preceding days had deferred the mighty exodus for which the insects were in readiness. It must have been so, for here, upon the return of warmth to the air, out they came in streaming hosts, a company beyond all counting.

A Great Exodus

From five nests, close to each other, the march-out began—from two at the same time. Two others followed, but the fifth was half an hour after the first in showing the shining head of its pioneer queen. Still, with five mutually hostile kingdoms involved, and two species of ants, it is interesting to note that within 30 minutes of each other all were moved by the same impulse, over an area of 60 yards—a world to an ant—on the same afternoon of the same day, and queens and kings sallied forth to meet their royal lovers.

Such excitement and nervousness, such hesitancy and courage, there were among the royalties; such patience and temper, such urging and bullying, such caressing and biting among the workers to induce their betters to fly. Some of the queens, who had never before peeped



Norland Hall, which has overlooked the Calder Valley, near Halifax, for five centuries



Sorting out the stones of what was the main hall before taking them to America

Many of our pictures and other art treasures have recently gone to the United States, and now Americans have begun to purchase our historic houses for removal across the Atlantic. Norland Hall, shown in the top picture, has stood in Yorkshire for at least five centuries, but a wealthy American has just bought it and will have it re-erected in his own country

out upon a daylight world, crawled hurriedly up a post, and from its summit boldly launched themselves into the air. Others were as timorous and reluctant as children afraid to take their first dip in the sea.

Many workers, clustered in ordered array about the exits of the burrows, and helped the queens and drones, dipping their antennae into the mouth of the gallery, and pulling a lord or lady bodily out, head foremost. But the main labour lay with those who could fly, but feared to do so.

The wingless worker ants lavished most loving care upon the faint-hearted, smoothed their wings, stroked their bodies, guided and urged them to the heights from which to mount, and finally in some cases, when patience was

exhausted, gave a sharp bite to the queenly legs, as if to say: "You may think it dangerous to fly, but it certainly is to remain here, wearying your exasperated slaves and guardians."

At length, within an hour of the first appearance of the swarms, the last queen had left, and the air was hazy with winged ants. Before evening many queens would be streaming home to nests, to bite off their wings and to begin their task of laying eggs, from which future colonies would arise. But of the myriads of drones not one returned to the place from which he set out. Death by a thousand channels awaited these.

Ant swarms may be expected till the end of September, even up to warm days in October when summer and genial autumn have been late.

TRAPPED IN A BOILER

ADVENTURE OF A TRAMP

Remarkable Experience

IMITATING THE TAR BABY

We have a saying "As you make your bed so you must lie on it," but this is a story of the calamity that happened to a man who lay on a bed he did not make.

A South African native named Bosman, having tramped many miles in search of work, arrived at Cape Town. Unable to find a lodging for the night, or any comfortable corner to doze, he wandered through the streets and came to one under repair. To his joy he saw along the roadway several big boilers, and into one of these he crept thankfully, without troubling much about its contents.

What the Baker Saw

At half-past four the next morning a baker going his rounds was startled by a feeble cry for help coming from the boiler. He lifted the lid, peeped inside, and saw a terrible sight that made him rush away for assistance.

The native was almost wholly embedded and absolutely helpless in a thick mixture of tar and pitch, for he had chosen as his bed not a steam boiler but a municipal tar boiler, and apparently the heat of his body had softened the mixture, and he had sunk into it.

Help was at hand and, after two hours' strenuous work, the man was levered out of the boiler minus his clothes and in a state of collapse. He was practically encased in tar, but his eyes, nose, and mouth had fortunately escaped.

Taken to the police station he recovered somewhat, and then, as there was a danger that the poisonous substances in the tar might be absorbed into his body through the skin, vigorous efforts were made to remove the worst of the stuff before he was hurried to hospital.

Problem for the Doctors

Here the doctors were faced with a new problem that even the much-recovered native began to appreciate—how to get him clean. Brer Rabbit, after having been stuck up on the Tar Baby, was soon after his release seen sitting on a log, cheerfully combing the tar out of his hair with a chip of wood.

But the inflammable, bituminous substance that covered the man's body proved, unlike the tar on Brer Rabbit, exceptionally hard, and its removal presented a difficulty that the medical authorities had never been confronted with before. Nothing daunted, however, they set gallantly to work, but it took the doctors a long time, and large quantities of paraffin, petrol, and soap, to get the hard tar off the native's skin and clean him up.

But at last it was done, and happily, later in the day, he was able to leave the hospital little the worse for the extraordinary and almost fatal adventure through which he had passed.

1922 CRICKET

COUNTIES THAT HAVE DONE WELL

Revival of Interest and Improvement in Play

GREAT SPIRIT OF HOPEFULNESS

This year's cricket season is now so near its end that its features may be summed up with certainty.

Distinctly it has been an interesting season, appealing popularly to the public, and marked by a spirit of hopefulness and an improvement in play.

The large crowds attracted to the principal grounds have been rewarded by good games, which have left the order of precedence of the chief cricketing counties satisfactorily clear. Yet there has been enough change and doubt, as the season proceeded, to awaken county ambition and keep expectation lively.

The failure of the Mother Country last year against the visiting Australian team, though a distasteful experience, seems to have had a stimulating effect, for the dullness that followed the war has worn off. Anyway, a revival of interest and some improvement in all-round play have been apparent.

Order of the Counties

Controversy about the best method of reckoning up the comparative play in the County Championship has flickered on, and will do so, for there is no ideal way of reckoning up merit in cricket, but the present method has had the broad effect that it has placed the counties in an order that is approximately right, according to most unprejudiced onlookers.

On all hands it is agreed that, judged by all-round play—by batting, bowling, fielding, and undaunted spirit—Yorkshire has this year the strongest eleven, with a fine, though dwindling, core of veterans, and a hopeful infusion of strong players who are coming into national prominence. No other eleven has commanded quite the same confidence or had such an air of easy strength. The outstanding Yorkshiremen have been Sutcliffe as a bat, as graceful as he is masterly; and Macaulay as a bowler. Rhodes remains a great figure, whether as a bowler, bat, or fielder.

Ups and Downs

A remarkable feature of the season's play has been the decline of Middlesex, the champion county on last year's play. The lesson her experience teaches is that batting strength will not win against all-round play.

A very welcome advance has been made by Nottinghamshire on sound lines; that is, all-round efficiency, including good leadership. The Midland county has a splendid cricket record in the past. It has been a home of cricket, vying with Yorkshire, Surrey, Middlesex, Kent, and Hampshire, counties that have grown cricketers for generations.

Lovers of cricket everywhere will rejoice in the advance of Notts from ninth place last year and seventh the year before to compete again in the front rank, that once was hers as if by right.

At the Close of the Season

Most of the counties occupy much the same positions that they have held in recent years. Half of them rank in the general mind as an upper, and half as a lower, section, with one or two changing places. Essex has very properly come up this year.

A county that, in spite of unequal play, has done well, and promises well under vigorous leadership, is Hampshire. Mead, who headed the averages last year, remains a tower of strength.

Surrey has failed of the highest honours through lack of high-class bowling. Kent and Lancashire are still elevens that are feared by the strongest.

Judged all round, the cricket season closes in a spirit of hopefulness.

CHINESE HAVELOCK

General Who Leads His Soldiers Singing

YELLOW ARMY THAT NEVER LOOTS

China, amid all her troubles, has produced a Havelock—a Christian general who leads his troops to church, and whose soldiers never loot.

This wonder of the Far East is General Feng, the new Governor of the province of Honan, who has belonged to a Christian Church for many years and is recognised as a man who sincerely tries to carry out the teaching of Christianity. His troops behave with the utmost consideration, and have established a reputation for chivalry and courtesy.

Feng and his men are remarkably like Havelock and his gallant soldiers, who, because of their Christian character, came to be known among the British troops in India as Havelock's Saints.

Havelock's Saints

Havelock used to hold services for his men, and, though their courteous and temperate lives were the talk of officers and men alike, they were as brave as lions, and could always be relied on in an emergency.

Once in Burma, when a night attack was made by the enemy on an outpost, the men ordered to repel it were not ready when summoned.

"Then call out Havelock's Saints," said the general. "They are always sober and can be depended on."

The description of Sir Henry Havelock, "every inch a soldier and every inch a Christian," might well be applied to the Chinese General Feng. When he entered his provincial capital recently to take up his new post, instead of being preceded by a great body of troops with guards lining the streets, he arrived on a bicycle attended by half-a-dozen men also riding bicycles.

Serving the People

Instead of issuing proclamations to show his authority he rode straight to the Y.M.C.A. headquarters, where he held a public reception. In reply to an address of welcome he declared that he came to Honan not to frighten the people but to serve them. He confessed publicly that he was a Christian and that it was his aim to do his duty as a Christian should.

At once great reforms were started. Evil characters were banished, beggars were housed and had work provided for them according to their capacity, and the city gates were painted with pictures showing the evil results of opium, wine, and tobacco, and of the neglect of sanitation. Many corrupt officials were called upon for the first time to account for the public moneys they had handled.

Wherever General Feng's troops go, singing hymns on the way, they create an excellent impression among the people.

ENERGY OF A LIGHTNING FLASH

Power to Lift 550 Tons a Mile High

A well-known scientist, Dr. C. T. R. Wilson, has measured the energy in an average flash of lightning, and finds it equal to 3700 horse-power hours—that is, sufficient to lift 550 tons to a height of a mile and a quarter above the earth's surface.

The energy was measured by a three-fold operation. First, the distance away of the flash was computed by noting the interval between the sight of the flash and the sound of the thunder peal. Then the height of the cloud discharging the electricity was found by means of trigonometry. Finally, the change in the electrical field of an electrometer was noted. From these three data the energy of the flash was worked out.

Dr. Wilson estimates that the average lightning storm represents enough energy to light a house by electricity for at least ten years.

PHOTOGRAPHING SOUND WAVES

Remarkable Achievement of the Camera

SPEEDING PROJECTILE SETS OFF THE FLASHLIGHT

The United States Bureau of Standards has just perfected a wonderful new photographic apparatus that photographs not only a bullet flying at the rate of 34 miles a minute, but also the sound waves set in motion by the nose of the projectile.

These sound-waves are used to start a flashlight and set the photographic apparatus in motion. The bullet is made to pass through a soap bubble, and so rapid is the process of taking the picture that, though the photograph shows the bullet after it has actually passed through the bubble, the bubble appears intact; it has not yet collapsed.

The rifle is fixed in a test block about 70 feet from a recording chamber in which the photographic apparatus is arranged. In front of the rifle is stretched a thin, vertical diaphragm, and sound waves from the speeding bullet, striking the diaphragm, kick a hammer from its support and set off electric sparks that supply the light for the taking of the photograph.

The nose of the bullet, as it cleaves a path through the air, causes a high compression immediately in front of it, and the illumination of the electrical spark passing through this denser air is refracted, causing a distinct image of the sound wave to be recorded on the sensitive plate. The faster the bullet is moving, the sharper will be the accompanying sound wave.

By arranging the apparatus to take two images of the flying bullet, one after the other at infinitesimal intervals, the speed at which it is travelling can be calculated.

It is one of the most marvellous achievements in photography that has yet been accomplished.

NEW WIRELESS IDEA

A Marvellous Valve

WILL THE BIG POWER STATIONS DISAPPEAR?

A new idea has come into the wireless world, full of possibility.

The important invention of Dr. Irving Langmuir, a little tube that can be held in the hand may even one day render obsolete the gigantic machines at present used for generating large wireless currents.

The device is the outcome of years of patient research in the famous laboratory of the General Electric Company at Schenectady.

Dr. Langmuir has already made many brilliant inventions, among which is the half-watt lamp—the incandescent electric lamp filled with nitrogen, or other gas, which gives us twice the ordinary amount of light hitherto obtainable from a given amount of electricity.

The valve originally invented by Professor Fleming, and improved upon by Lee de Forest, has already revolutionised wireless, making the long-distance telephone a success, but so far it has not been of any help where very great distances have had to be covered, as sufficiently powerful currents of electricity cannot be passed through it.

Dr. Langmuir's new valve, which greatly interested Senator Marconi a few weeks ago when he visited the doctor's laboratory, will allow 30-horse-power—as electricity—to pass through it, the great heat generated in the little glass bulb by this huge current being dissipated by a current of water which keeps the plate cool.

With ten of these valves used together, it will be possible to send both wireless telegraph and telephone messages across the Atlantic without employing any large and elaborate apparatus.

THE RED MAN'S STEED

WHO GAVE THE INDIANS THEIR FIRST HORSES?

How Animals Colonised a Continent

FESTIVAL DAY IN THE GREAT NORTH WEST

One of the festivals of the Great North West is Indians' Day, the occasion on which the noble Red Man a little relaxes his stately dignity and sports and plays like the child of Nature he is.

Needless to say, the latest celebration, at Banff in Canada, included many feats of that splendid horsemanship for which these old lords of North America are famous. We never think of an Indian brave apart from his fleet and agile mustang. He rides as if he were born to the saddle, as if from the dawn of human life on the great continent Indians and horses had had an uninterrupted partnership.

Before the Days of Horses

Yet the fact is that the horse is newer to America than his rider. Four centuries ago no one in the New World had ever seen or dreamed of a horse! Today the splendid natives of America are probably the finest natural riders in the world, but until the sixteenth century they were poor foot-Indians, for not a horse existed outside the Old World.

The Indians of Peru, a marvellous people who brought maize and coffee to unsurpassed perfection, had tamed the intractable alpaca as a beast of burden, but the Red Men, wanderers on the earth, had nothing but dogs, which were domesticated wolves and coyotes.

The first white riders from Europe seen by the natives were thought to be gods, with the horses as part of themselves. The Greeks must have thought the same of the first horsemen they saw when history began to dawn, for they imagined a creature, half man, half horse, and called it a centaur.

Animals Run Wild

According to Darwin, the first horses introduced into South America were landed at Buenos Aires in 1537. The colony failed and was deserted. As camels ran wild in Central Asia when sandstorms blotted out an ancient civilisation there, so the horses from Europe ran wild in America when this early colony was overwhelmed.

Renewed colonising efforts and exploration showed an astonishing sequel. During the next forty years those few horses running wild from Buenos Aires multiplied into teeming droves, and, spreading and spreading, reached by 1580 right down the continent to the Strait of Magellan, where in that year a Spanish traveller found Indians riding them as to the manner born.

It would be interesting to trace the advance of the horse northward as exactly, and to find how he reached the lands of the Red Indians and came to be captured by those nimble pedestrians, and broken to bit and bridle by men who had previously known nothing of bits, bridles, or horses.

Master of the Horse

The whole story is one of romance and wonder. It affords a glimpse into Nature's methods of filling empty spaces with valuable animal life, and of the extraordinary manner in which a savage people, given the means, seize an opportunity for betterment by the taming of dumb creatures in modern days, just as primitive man first did in the long, long ago of human history, when the first wolf was kennelled as a dog, the first wild cattle were stabled for milk and meat, the first horses roped or snared in a pitfall and made to carry man, up to the time that railways came.

The Red Indian, supreme master of horsemanship, is the newest owner and rider of this well-loved friend of man, but he would find it difficult to imagine an age when Indians had not horses.

REAL MONEY FOR RUSSIA

MORE PRECIOUS THAN GOLD

Platinum Which Was Once Thrown Into the Sea

STORY OF A METAL

The Russian Government is said to be making coins of platinum, and, if so, it will be able to buy goods with them in any civilised country, for, while Russian paper money is not worth the cost of the paper, platinum coins would be more valuable than gold.

The story is probably true, for Russia holds almost the entire known supply of platinum. It is found in the Ural Mountains, but since 1914 the deposits have not been worked, and there has been a world famine of this precious metal, which is used for a variety of purposes such as the making of crucibles for laboratories, points for lightning-conductors, and fine wire for supporting heavy weights.

A Gold Brick

The increasing demand and the cutting off of the supply have raised the price so enormously that experts have sought a substitute. For some purposes gold would do, and a Cambridge scientist stated the other day that in order to cheapen the crucibles used in the laboratories they would have in future to be made of gold!

Platinum, a greyish-white metal something like silver, was first discovered in South America, where it received its name, which means "little silver." It was brought to Europe in 1740, and up to 1823 practically all the platinum came from South America. In 1824, however, Russia began exporting platinum which she had discovered in the Urals, and since that time nearly all platinum has come from Russia.

The metal is now about £20 an ounce, but at the end of the 18th century it was eight shillings a pound, and ingots of it were gilded and sold by swindlers to the unwary as solid gold. This is the origin of the slang expression "selling a gold brick" for the fraudulent sale of something worthless. Now, of course, a brick of platinum is worth about five times as much as a similar gold one.

Throwing a Fortune Overboard

At one time the export of platinum from South America was forbidden by the Spanish Government because of the prevalence of this fraud, and when found on board ship the metal was invariably pitched into the sea to get rid of it. If only the platinum thus lost could be recovered it would be worth a fortune now.

In the early nineteenth century the Russian Government used to make its least valuable coins of platinum, just as we make pennies and halfpennies of bronze. It must surely have been at that time that the Bad Boy lived who in the Book of Beasts says:

I shoot the hippopotamus with bullets made of platinum,
Because if I use leaden ones his hide is sure to flatten 'em.

With the single exception of osmium, platinum is the heaviest substance known in the world.

K O P

Call Letters of Wireless

Every wireless station has its own call letters, usually three, sometimes four.

The call letters of one British station are YES, but OUI belongs to a Danish, not a French, station. Two American ships are NAN and NEL, while a British submarine has the call GLAD.

Perhaps the most appropriate is that of a Detroit police department which has the call letters KOP!

REST FOR A WEARY BODY

Saving Work for a Lung
LAST CHANCE IN CERTAIN CASES

By Our Medical Correspondent

We have two lungs, but for the ordinary activities of life one is sufficient, and sometimes in consumption one lung is rendered almost useless by disease, and yet the consumptive continues to live and to move about.

Knowing this fact, doctors nowadays sometimes put one diseased lung out of action so that rest may promote its recovery, and the grown-up papers have been talking of this as if it were new. But it is not new, nor is it a difficult matter.

The lungs are elastic structures always ready to contract, and if nitrogen gas is pumped under pressure into the chest cavity between the ribs and a lung the lung contracts into a ball, and no longer expands when the chest expands with breathing.

After a time the nitrogen gas is absorbed by the blood; but by pumping in gas at intervals the lung can be kept quiet for a long time, and so its wounds and ulcerations are given a chance to heal, a chance they would not have if they were being stretched sixteen times every minute by the expansion of the chest which takes place during respiration.

For all inflammations rest is beneficial, and the inflammation of the lung gradually subsides if the lung is kept quiet. This operation, which has been carried out for many years now, is known as "artificial pneumothorax," and the Medical Research Council, which has lately been investigating the method of treatment, reports that it gives a good chance of cure to some patients who would otherwise not be cured. The "blowing-up" causes hardly any pain or discomfort, and patients are able to breathe comfortably with the one lung.

BOB AND HIS MASTER

The Dog's Sense of Ownership

A Scottish correspondent sends us an incident showing how a trained dog will grasp the idea that his master owns certain things, and it is his duty to keep them or bring them.

Bob was a black retriever, excellent at his work. One day, when there was no shooting, I was walking a mile or so from our house when I heard behind me a great noise of shouting and scuffling. Turning, I saw a ragged man with a bunch of hare and rabbit skins tied together on his back, and Bob standing with his feet on the man's shoulders, pulling the string from his hands.

The man shouted and raved, but Bob persevered till he dragged from the man the whole of the skins by the string, and then, triumphantly wagging his tail, laid them at my feet.

No doubt they had been sold to the man by our cook, but Bob thought it was his duty to restore them to, as he believed, their rightful owner.

CAN A SHEEP REMEMBER?

A Story from Anglesey

Many people regard sheep as lacking in intelligence, but the following story seems to show that they are not deficient in memory.

A friend in Anglesey kept two sheep which she called by names. Later, when she moved into a town, she sold them.

A year after, when she visited the neighbourhood, she passed a field in which was a flock of sheep belonging to the man to whom she had sold her sheep, and she called to them by name.

At once two of the sheep looked up and ran to her, evidently recognising her voice and remembering their names.

THE EARTH QUAKES

Alarming Experience in the Midlands

FAMOUS INSTRUMENT MISSES ITS CHANCE

Residents in a number of villages in Worcestershire and Warwickshire and in part of Birmingham were alarmed by an earthquake shock a week or two ago. The disturbance, though slight and of only four seconds' duration, occurred through an area about 25 miles long, and at a little village near Droitwich it shook the houses till doors banged and crockery rattled violently.

The shock was felt only a few miles from the famous earthquake-recording station of Mr. J. J. Shaw at West Bromwich, but, curiously enough, it was not recorded there because the clock which helps to operate the mechanism had unexpectedly stopped. So that, although Mr. Shaw has recorded earthquakes as far away as China, this one earthquake, almost on his doorstep, escaped him in a very provoking way.

Very slight earthquake tremors are by no means so infrequent in Great Britain as might be imagined, though they are never noticed without the aid of sensitive instruments. Heavy disturbances are few and far between, and one of the most severe shocks experienced in this country was at Colchester in 1884. Then, considerable damage was done to property, but fortunately no lives were lost.

One earthquake occurred in the Midlands in January, 1916, and, though this did scarcely any damage, its effects were noticed from the borders of Wales right across to Lincolnshire.

LEARNING FROM B.C.

Doctor Rediscovered an Old Secret

Long ago, when it was a regular custom for people who were ill to be "cupped," that is, to have blood drawn from them, physicians had frequent opportunities of seeing what state their patients' blood was in.

They were often able by this means to discover the nature and causes of illness. As far back as the days of Hippocrates, who lived four centuries before Christ, it was known that certain diseases produced a whitening of the blood, which was clearly perceived by examining the blood drawn off, and enabled the physicians to forecast the course that ailments would follow.

Since blood-letting went out of fashion this method of diagnosis has been given up; but now a Swedish doctor named Fahraeus has rediscovered it, and he announces it to be of great value. He has found that some people who seem to be quite well are in danger of being attacked by maladies that cannot be discovered except by an examination of the blood.

THE DALTON WAY

Education by Children's Own Inquiries

EDUCATION ON THE DALTON PLAN. By Helen Parkhurst. G. Bell & Sons. 5s.

This book, by the American founder of a system of regulated self-education by the scholars in a school, will interest many teachers, as it is being widely discussed and is usefully suggestive.

Dalton is the place in the U.S.A. where Miss Parkhurst put her scheme into practice. She admits it is not suitable for quite young children who cannot think and work by themselves; and it is best adapted to schools in which there is a sufficiency of teachers for one to teach each subject.

The aim of the system is so to map out the study of each subject that the scholars can find for themselves in books what they are seeking to know, and come to the teacher only for the purpose of revision and suggestion.

This book explains the system and tells of its adoption in some English schools.

WISDOM OF A BEETLE

INTELLIGENCE OR INSTINCT?

Curious Story of an Insect with a Missing Leg

HOW IT MANAGED

By a South Kensington Correspondent

Not very long ago one of the useful tiger beetles was captured, and was found to have only five legs instead of its full six. The missing limb was the right foreleg, of which only a tiny stump remained. The wound had already completely healed.

How this little accident occurred may be easily imagined. These beetles are valuable friends of man, because they catch and kill many harmful insects; and it is probable that in one of these encounters this beetle lost its limb through being bitten.

The cripple was kept in a glass-covered tin to see what common insects it would attack. A little soil and moss were placed inside the tin, and regular supplies of insects given.

Now, the extraordinary point was this. When standing still or resting, the beetle placed the one foreleg out in front of its head, thus giving the forepart of its body equal support; but, when about to attack a foe it raised, and rested the odd leg upon part of its head and the left antenna.

Evidence of Intelligence

By doing this it was free to dart to the attack without being encumbered by an unequal poise or interfered with in its movements by the odd member. Moreover, by this action it also removed the risk of biting the leg in its own huge jaws when the fight was on, which risk it would have run if the single foreleg had been placed in the same position as when standing still.

Although there is a difference of opinion with regard to the higher social insects—ants, bees, and wasps—most of the others are generally considered to be devoid of intelligence, and to act solely in response to certain stimulations. That this is so is definitely proved by large numbers of experiments.

But in the case of this tiger beetle there seems to be evidence of intelligence, for there was nothing at all instinctive about its action.

SQUIRREL THAT MISSED ITS JUMP

And the Salmon that Leaped on to the Bank

ANIMALS THAT MAKE MISTAKES

The many accounts by our readers of the cleverness of animals and birds have led a Surrey correspondent to send a few instances where he has seen them make mistakes.

A squirrel was playing about the top of a very high elm tree in a row of trees about the same height, but not quite near together, and evidently he wanted to cross from one to the next.

He ran out as far as the small boughs would carry him, but several times his courage failed and he did not jump. At last he ventured, made a fine leap, but missed by a few inches, and fell quite sixty feet on to a grass lawn.

When falling he opened out his legs and held his tail straight to break his fall, and did not seem hurt by it in the least, but scampered off at once and ran up the tree he wanted to get to.

I have seen tame pigeons alight on the green, powdery vegetable scum of a pond, evidently thinking they were settling on solid land; and I have watched a wood-pigeon settle on a small dead branch which gave way, and then fall, fluttering down for several yards before it could recover its balance.

Also I have seen a pheasant dash against a small tree and kill itself. Twice I have watched salmon leap out of the water and fall on the bank.

Apart from its use in testing or assisting to predict land and sea fogs, and estimating smoke pollution in cities, the instrument can be used to examine factory and mine dust and foul air. Twelve of these instruments are being supplied to various countries so that more precise information regarding suspended impurities in the atmosphere may be obtained from widely-separated areas.

CHILDREN'S NEWSPAPER

SEPTEMBER 16 1922

This Stands for Ever

THERE is a passage in Edmund Burke which all quarrellers should learn by heart.

He is speaking of the wars which continually consumed the life and strength of Greece, and he exclaims with astonishment how such a small spot of Earth could furnish men sufficient to sacrifice themselves to the pitiful ambition of possessing a few thousand more acres.

Yet to see the acrimony and bitterness with which this was disputed (says he), what armies cut off, what fleets sunk and burnt, what a number of cities sacked and their inhabitants slaughtered and captured, one would be induced to believe the decision of the fate of mankind depended upon it.

And then Burke continued with these most true and eloquent words, full of meaning still:

But these disputes ended as all such ever have done and ever will do, in a real weakness of all parties; a momentary shadow and dream of power in some one, and the subjection of all to the yoke of a stranger, who knows how to profit by their divisions.

This is the commonsense not only of all wars, but of all violent quarrelling and disputing. The thing does not pay.

The end in all such matters always has been and ever will be the same—weakness, poverty, subjection, and bitterest disillusion. It is still a fact that men do not gather grapes of thistles, that what a man sows he shall also reap, and that they who take the sword shall perish with the sword. Truth does not change. Prosperity still comes from peace, and ruin from war.

We may surely hope that even politicians are at last suspicious of the blessings of war, now that the Europe they have mismanaged has been brought to wreck; but we should like to think that all nations are beginning to see that there is an unbreakable law in these matters, and that, just as grapes do not grow on thistles, so prosperity cannot come from violence.

Science sets the whole world a most admirable example in this respect. In that arena, which is consecrated to truth, there is no violence. Men of science differ in opinions, but they do not bawl at each other, or tear each other to pieces, or go on strike. This cannot be said of politics, or even of religion or trade. The people in those camps still believe in shouting and fighting. They are still like the savage with his club.

But for them, as well as for nations, the truth still stands that peace is the only basis of prosperity. All violence ends in one way. It pays us all to cultivate charity and good feeling. Brotherly love is not a dream, it is mankind's necessity. What a man sows that shall he also reap.



THE EDITOR'S TABLE

Fleetway House, Farringdon Street, London

above the hidden waters of the ancient River Fleet, the cradle of the Journalism of the world



A Story

Is it not worth while to give the new efficiency story of Mr. Ford?

One of his men has just had a dream, and in his dream he saw Mr. Ford at his old game of speeding production by using fewer men. Mr. Ford was dead, and the funeral procession suddenly stopped. Mr. Ford had come to life, and as soon as the casket was opened he sat upright, and, seeing six pall-bearers around him, cried out: "Put this casket on wheels, and lay off five men!"

We are quite sure nobody will enjoy the story more than Mr. Ford, and we are glad he is alive to read it.

The Men Who Do Not Know

THERE was a time when ignorance and carelessness on the part of those who take part in governing the world were hushed up, and ordinary folk were led to believe them far more intelligent than they really were.

It is not so now. Now, fortunately, their mistakes and follies are sometimes exposed, and we can see how necessary it is to keep a sharp eye on our rulers.

New York newspapers have been making fun of two American senators, both supposed to be authorities on international politics, who talked about the island of Sakhalin without knowing where it is. This island has been transferred from Russia to Japan, and the question was asked whether this might not be a cause of future war. Might not Russia try to recapture it some day?

"No, no," said the two senators; "it is too far off the mainland." "How far?" somebody asked the senators. One put the distance at several hundred miles, the other at 500. Yet actually part of the island is so near the Siberian coast that in winter, when the sea is frozen, it is within a walk! At no point is the distance more than 150 miles.

How can the world be put right by people like that? And British politicians are no better. Did not one of the most famous of them speak of Kharkov as a general, not knowing that it is a town?

Tongues In Trees

THE more Science investigates the laws of Nature the more occasions does it find for wonder and admiration.

There seems to be sound reason, however poetically expressed, in a quaint old rhyme which is now almost forgotten:

Because out of thy thoughts God shall not pass,
His image stamped is on every grass.

Shakespeare cherished the same faith. If certain men of science had a little of his imagination they would preach this same gospel from the house-tops.

Oh, for an Accident!

IT was said of a famous author that wherever the thickest shadow of the night might at any moment fall, there he stood. "It is not everybody," remarked the critic, "who could have so cleverly avoided blundering on the daylight in the course of a journey to the Antipodes."

We hope that this verdict may not be passed by the historian on the present statesmen of Europe. If only they would blunder on Peace how grateful we should be!

Tip-Cat

KING CONSTANTINE's hold is slipping, we read. That is what he gets for trying to stick to Greece.

CHILDREN, we are told, should be self-possessed. But is it not better to let their parents keep them?

WORKING men nowadays, according to a student, are very well off. Evidently he means that they have got on.



PETER PUCK
WANTS
TO KNOW
If sleep-
walkers walk
in their shoes

THE latest fashion craze is to have bells on the shoes. But the rings are still on the fingers.

THE only way to keep up with running expenses is to make them walk.

MR. EUSTACE MILES thinks the time will come when we shall eat neither plants nor animals. If the War Men have their way the next thing will be mud pies.

THE Kaiser's new book was written in Holland. It is a low-lying country.

CHESS, according to an expert, is not a recreation. It is, of course, a Board-meeting.

Reparations

By Peter Puck

THAT the Germans can pay
Some would have us believe;
But can we, some say,
Afford to receive?
Was there ever a case like this before?
It makes us quite vexed that we had the War.

Are You Sure?

DRAKE discovered a continent by mistake; he was looking for something else. Cromwell came to see that the man who is least certain of his destination travels farthest. And yet the great bulk of mankind prefers to live by the rule of security, and takes for its battle-cry, Safety First.

It may be wise to seek one's destiny with cautiousness, but the saying of a great thinker that "there is no Epic of the Certainties" seems to be true. The great adventures and achievements of life all take place in the region of Faith.

The Old Lady at the Door

By La Petite Européenne

I HAVE a friend in the village now, an old, old woman, a wool-spinner. She stood on her threshold one day, and, interested in her quaint old-fashioned work, I asked:

"May I sit and watch you?"
"Of course you may; they all do."
"Do you spin all day?"
"Oh, no! I have quite enough to live on, you see. I do this spinning to help a neighbour."

"Then what do you do when you are not spinning?"

"I read most of the time."

Dear old peasant, living here, three thousand feet high in the Pyrenees, in this old-fashioned village that has not even a fountain, and where we must all draw water from the stream—dear old lady, loving books!

"And what do you read?" I asked.
"Anything; the papers and books in my house. Do you like books, mademoiselle? Shall I lend you some?"

The Children Far Away

Then, as if to prove her regard for one who seemed to like books, she told me of her life. She had married very young, and her husband died long years ago. She had had eleven children, but only four were left; and one is a policeman in Paris; another married a shopgirl in New York; a third has a business in the north of France; the fourth is a teacher far away.

"So you live all alone?" I said.
"Yes, my dear, except when they come for holidays."

"But don't you go to see them?"
"No. It is too much for me. And, besides, travelling frightens me."

"Then you have never been away from this little village?"
"Never."

"And may I ask if you are happy?"
"Thoroughly happy; not lonely in the least. I know them all in the village, you see, and, having nothing to do for myself, I go about and help; nursing one, comforting another, telling the children stories. I feel that they are all mine."

Giving Herself

And so this old lady, by giving so much of herself to others, ends by possessing a little of herself—and is not to possess oneself to be conscious of the good of life? Is this not really to be happy?

Then I asked this old lady, whose children are far out in the world while she has never left her little village and has never even seen a train, what she would do if she were to live her life again. She looked up and smiled as if she had nothing but peace in her heart, and she said:

"I would do it all over again—over again exactly."

How many would give all they have to say the same?

Be Ready

For all your days prepare,
And meet them ever alike;
When you are the anvil, bear;
When you are the hammer, strike.
EDWARD MARKHAM

NATION'S PUZZLE HOW TO GET ITS OWN WAY

Curious Difficulty of the American Constitution CONGRESS WITHOUT POWER

By a Political Correspondent

A very extraordinary position exists in America, showing the helplessness of Congress in certain vital matters.

The Constitution of the United States is very different from our own.

The British Constitution is a matter of tradition and established custom. It is for the greater part outside the law, although law is obedient to it. Thus, one of the most familiar of British institutions, the Cabinet, was not established by law, and is not continued by law.

This system of an unwritten Constitution, whatever its disadvantages, has a decided advantage in the fact that it grows and changes to suit the advance and thought of the times.

An Uncrowned King

The United States of America, on the other hand, has a written Constitution which strictly defines the powers of the Federal Republic itself and of the many States which make up the nation. Certain things the Federal Parliament may do, and certain other things it may not do. The States jealously reserved to themselves, when the Constitution was framed, complete legislative power in many important matters. The President has great personal powers under the American Constitution, and is really much more a king than is the king of a constitutional country like ours.

The fact that each American State makes laws for itself on many important subjects has, as might be imagined, some very curious results. For instance, laws for the protection of children vary widely between one State and another.

In some cases the State laws on labour are excellent, very much like our own, but in some Southern States employers are allowed to work children with few restrictions.

Trying to Pass a Law

Congress, as the Federal Parliament is called, has made many attempts to legislate to prevent the employment of young children in factories. On each occasion, however, the United States Supreme Court, which has power to decide what can or cannot be done under the American written Constitution, has declared the law passed by Congress to be unconstitutional.

In 1916 Congress tried to achieve its end by passing a law to prohibit between States trade in goods made by children. The Court held this law to be wrong.

Congress tried again, and this time it endeavoured to get over the difficulty by enacting a Child Labour Tax Law, which imposed a special tax of 10 per cent. on the profits of any factory or workshop employing a child under 14, or any mine employing a child under 16.

Unfortunately this, too, has failed, for the United States Supreme Court has declared the law unconstitutional on the ground "that it was an attempt on the part of Congress to do indirectly what it had no power to do directly, the regulating of child labour being a matter for individual States."

Change of Public Opinion

As it is very difficult to make any alteration in the written Constitution of the United States, a considerable majority of States being required for the purpose, many millions of American children must remain without proper protection until public opinion changes.

It is, therefore, a pleasure to see that marked change is taking place in many States. In Connecticut the working hours of children under 16 were in 1921 limited to eight a day on six days in the week, while night employment was prohibited.

In some cases, however, the State laws are in advance of ours in regard to the care of children.

CAN WE GET ELECTRICITY FROM THE EARTH?

A n apparatus of extraordinary interest has been invented by a French engineer, Jules Guillot, who claims to have discovered a means by which he can utilise the electric currents in the earth for lighting lamps and for producing power for various purposes.

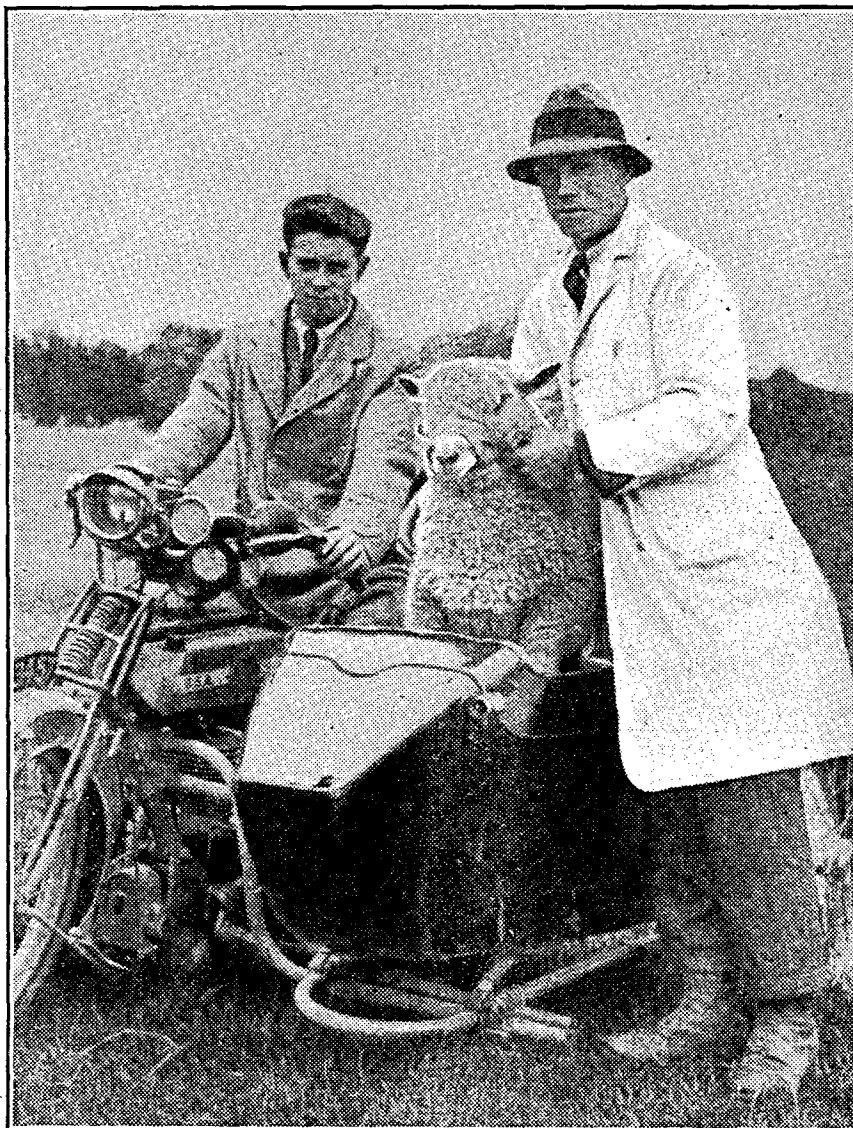
M. Guillot has been working on his invention for eight years, and believes that it will solve the problem of using the electrical energy of the earth, which is at present running to waste, just as millions of horse-power in the shape of waterfalls have been wasted for centuries for want of the necessary knowledge and

appliances to turn it to practical account for the service of man.

Details of the new system have not yet been published, but are to be made public in the near future. Some form of static machine is employed which transforms the high voltages of the earth currents into lower ones suitable for ordinary use, and from this transformer the inventor hopes to be able to distribute electric current for lighting purposes, as is at present done from a generating station.

The Frenchman's claims have caused keen interest in engineering circles.

HOME FROM MARKET



The up-to-date methods of English farmers today would greatly astonish their predecessors of yesterday. This young farmer is taking home his purchase at Oxford Ram Fair in the side-car of his motor-cycle, certainly a rapid method of transit for a sheep

THE FLOODS THAT IMPRISON THEMSELVES

M ANY American rivers rising in mountainous areas and flowing through large level plains hundreds of miles away are subject to heavy flood.

The melting of snow in the mountains sends the water down in vast volumes at a rushing pace, and the banks are soon washed away, when the water spreads out over the plain, doing immense damage.

One of the most ingenious plans ever devised to overcome this difficulty has been perfected, and is being put into practice on some of the Kansas rivers. The scheme is to make the floods imprison themselves.

A series of three-legged frames is made, each consisting of three iron poles fastened together with wire rope. The lower ends of the poles, are placed in the river bank, being held in position by heavy stones and stakes.

The frames are then wired together and filled in with masses of brushwood. When the flood comes, carrying with it large quantities of stones and silt, the brushwood and iron poles are not sufficiently solid to catch the full force of the flood and be washed away, but they slow down the current enough to make the water drop some of the sediment it is carrying.

This strengthens the framework, and when the flood is over it is found that in place of the flimsy brushwood barrier there is now a solid mass of sand and silt, which forms an effective barrier and safeguards the plains against the next flood.

American engineers are very much impressed by this method, and there is no doubt that where conditions permit rivers will be made to imprison themselves in this way.

THE NEW FLYING IDEA FUTURE OF THE ENGINE- LESS AEROPLANE

How the Glider will Help Weather Science

LEARNING ALL ABOUT AIR MOVEMENTS

The recent successful gliding attempts in Germany and France, achieving the hitherto impracticable feat of flying without mechanical power, open up new possibilities of research on weather problems which may have an enormous importance in meteorological work.

The problem of flying as we know it today was solved, to all intents and purposes, when sufficiently light and yet sufficiently powerful engines could be constructed. The design of the planes, or wings, although an extremely vital factor, was in reality secondary to the all-important matter of the engine, for, provided sufficient forward momentum could be maintained, the downward pull of gravity could be overcome.

Birds in the Air

The glider—an engineless aeroplane—is in reality a kind of kite, with the important difference that it has no string or wire from the ground, and that it can be, to a certain extent, controlled by a pilot, whose weight it is capable of supporting. A true kite must be flown in a wind, and the string prevents it from being blown along freely, so that the air must blow past it. Relatively to the air it is in motion, and becomes to all intents and purposes an aeroplane.

The idea of the glider seems to have been derived principally from observing the extraordinary faculty which some birds possess of flying without any apparent motion of the wings. Our knowledge of the mechanics of flight is sufficient to make it certain that unless there is some muscular movement of the wings, or at least some part of them, the bird could not support itself in perfectly still or descending air. It is therefore supposed that birds acquire an acute sense of stability which enables them to take advantage of every rising current.

The Art of Gliding

This idea contains the secret of the art of gliding. Supported on a light plane, sufficiently sensitive to enable every vertical current to be detected, the flyer deliberately seeks out places where the air is moving upwards, and so directs his course, by means of his rudder, that he will remain in these upward-flowing currents for the longest possible time.

With long practice there is no doubt that flyers will acquire great skill in detecting upward air currents; the habit will become subconscious, just as swimming becomes instinctive.

But what has this to do with the weather? Its importance in the study of the weather is fundamental. The most outstanding fact which meteorology has taught us is that practically all weather phenomena depend on the upward and downward movements in the atmosphere.

Upward and Downward Currents

Fine, clear weather is practically invariably associated with descending air; cloudy weather, rain, snow, and thunderstorms are directly caused by ascending air.

A very large part of the work which is being done in studying weather is therefore directed to detecting upward air currents, and the changes which give rise to them. It is because these vertical currents are so slight in comparison with the horizontal movements, and so difficult to observe and measure, that the weather is so little understood.

If the new flying leads to a wider knowledge and a closer understanding of the vertical movements of air it will do more to advance our knowledge of meteorology than any discovery of recent times.

ORCHARD PERIL SHALL WE LOSE OUR PLUMS AND APPLES?

Fungus Disease that Devastates
Plantations

SCIENCE SEARCHES FOR A REMEDY

By Our Country Correspondent

Will England lose her plum and apple trees? This is the question fruit experts are asking, and some of them think she may. The Board of Agriculture, however, is more hopeful, though alive to the peril, and it has issued stringent regulations with a view to saving the orchards.

Disease has seized the fruit trees and swept through the orchards of the land, in some cases utterly destroying them. It is known as silver-leaf, because of the appearance of the foliage on diseased trees. It is caused by a fungus; and, although scientists have been studying it for years, no remedy has been discovered.

Danger of Dead Wood

"Silver-leaf disease," says the Board of Agriculture, "is one of increasing danger to fruit-growers with each succeeding year; and it is only by combined action, and by adopting preventative measures that orchards can be kept in a prosperous condition."

It is important for everyone who has any fruit trees in his garden to know about this disease, for the occupiers of all premises are now liable, under penalty of a fine, to destroy any trees or parts of trees that are suffering from silver-leaf.

Not only must the dead wood infected be burned, but it is compulsory for all dead wood of any kind on plum trees to be cut off and burned each year. Silver leaf is usually first noticed when the foliage of plum or apple trees develops a silver or leaden sheen. Gradually the branch dies, and then branch after branch is attacked until at last the tree perishes. A tree may sometimes be saved if the branch where the first signs show themselves is carefully cut off and burned at once.

Tell-Tale Fungus

After the branch or tree has died a leathery, purple fungus is seen pushing its way through the bark and forming bracket-like projections.

This fungus was already in the wood of the tree, and the bracket-like appearances are only the part of the plant through which it produces spores. The spores in their turn produce other funguses, which are carried by the wind. They settle in cracks, on wounded surfaces, and in fissures of the bark, and when they germinate they attack first the dead wood and afterwards invade the cells of the living part of the tree.

Even after the bracket-like growths have begun to wither they are revived by a shower of rain, and the spores which appear on the underside may go on being produced for a long period.

Asking for Trouble

This terrible and destructive fungus grows not only on plum and apple trees, but also on almond, apricot, peach, nectarine, cherry, Portugal laurel, horse-chestnut, laburnum, gooseberry, and currant; and the spores from one kind of tree will germinate on any other kind.

The Victoria plum is the most susceptible of all trees, and the Ministry of Agriculture some time ago declared that it had been attacked and killed in such large numbers that unless drastic measures were taken to prevent the spread of the disease this variety of plum was threatened with extermination.

Botanists at Cambridge have spent years studying this disease, trying to find some remedy, but have so far been unsuccessful. The only course is to destroy all old wood about a garden, and, where a branch is attacked, to cut it off and burn it at once. All wounds in trees should be pared over with a knife and covered with Stockholm tar.

No pieces of old wood for burning should be allowed to lie about in an orchard. It is simply asking for trouble.

MILLIONAIRE AND WORKMAN

Andrew Carnegie's School
Friend

THE BOY WHO CLIMBED TO THE TOP

An old school friend of Andrew Carnegie has lately died, at the age of 81, in his native town of Dunfermline. He was George Leslie, and a schoolboy who knew him sends us this note about him.

Andrew Carnegie lived in a thatched cottage which was made to accommodate two tenants. Both tenants had two rooms upstairs, while the Carnegies had an extra room downstairs. This extra room extended the whole breadth of the cottage, and was used by Mr. Carnegie for his loom and as a workshop.

At times, when work was bad, it was hard to keep the family alive, yet they managed to obtain a living.

It is with the family who occupied the other half of the cottage that this note is concerned.

George Leslie and Andrew Carnegie were staunch school companions, and when Carnegie went abroad with his family they parted, never to meet again till the time of the opening of the Carnegie Library at Stirling. After the gathering they met again, and their former friendship was renewed. Mr. Carnegie, who was then a millionaire, asked Mr. Leslie if he required any help; but, having been a hard worker throughout his life, he needed nothing.

Once, during their schooldays, the two boys climbed a high wall which enclosed a gentleman's estate, and sat there viewing the flowery landscape.

Neither had seen such a sight before, and both were wonder-struck; but afterwards Andrew, who was an ambitious fellow, told George that when he grew up he would buy the estate for the boys and girls to play in. He was as good as his word. The place is called Pittencrief Glen, and was opened to the public through Mr. Carnegie's generosity. The mansion is a museum.

FRESH START IN LIFE A Prison Reform

In the State prison of Wisconsin any prisoner who chooses to devote his evenings to study can take courses prepared by the university of the State.

All day the prisoners are occupied in making twine. Then they have three hours' leisure before "lights out." During those hours, 84 men are working harder than the university students.

Some are learning law, some engineering, some take a business course of bookkeeping and methods of commerce. They are all animated by the desire to make a fresh start when they are free again, to wipe off their bad record by becoming useful citizens.

Is not that what prisons should do? That they are becoming more humane and sensible an incident at Cardiff shows. A man serving a sentence there was let out to say good-bye to his dying wife and to attend her funeral. A clergyman and a Salvationist undertook to be responsible for his returning to gaol after the funeral, which he promptly did. For being trusted he will surely be a better man.

SEEDS GO BY TRAIN How Plants Spread

Plants are spread in many ways. As we know, birds and sheep, as well as wind and water, carry the seeds from place to place, and man himself often takes seeds over long distances on the mud gathered by his boots in a damp field.

There is, however, according to Mr. J. L. North, Curator of the Royal Botanic Society of London, still another agent, and that is the railway train.

Many plants, he says, are carried from county to county by the train, the seeds being blown on to the train at one place, and then off at another. This is particularly the case with strange plants found near railway embankments.

MAKING THE WORLD FRIENDLY

A STEP TOWARD IT

The Brotherhood that Began
in Cairo in the War

HELPING THE EGYPTIAN BOY

By Our Missionary Correspondent

During the war many men from Great Britain in khaki found themselves in Egypt. They were members of Brotherhoods in their own country. Why, they asked, should they not form in Egypt a Brotherhood of men of all nations?

This they did, and though now these men are almost all back in their own country, the Brotherhoods they formed still meet and are doing noble service for the children of Egypt.

There are thousands of poor little beggar children in Egypt. They are homeless and friendless, and often need medical attention. First the Brotherhood opened a shelter, and afterwards a home, for these outcasts. In December, 1920, the first little Brother, a child of four, was admitted, and so began a great adventure of mercy.

Breaking Down the Barriers

Egypt was at that time, and still is, a land where there is a great agitation for "freedom," and every British institution is suspected by many. At first the Waifs' Home was looked at with distrust, but such a work was bound to win its way to the heart, and so it has become a work which brings people together, Egyptians and British alike. It is a work which breaks down the barriers between peoples. Blessed are the peace-makers!

More than four hundred have already been rescued. Of the boys, nearly 90 out of a hundred needed medical attention. They could not read; in Egypt few grown-ups can read at all. But the boys in this Home are taught to read and write, and those who show special ability are passed on to advanced schools, where they are taught also to make carpets and furniture. They have their garden, and they make their own bread, while in the dispensary some of them help the doctor.

The senior boys are like prefects in an English school, guiding its affairs with kindness and common sense.

This fact both astonished and delighted Lord Allenby when he visited the Home. And all this is done at a cost of £12 a year for each boy. There are still thousands waiting to enter Happiness House, and we hope the Brotherhood will go on with its great adventure.

THE SMOKE TAX

What We Might Save for
Ourselves

Nearly everyone grumbles at the taxes imposed by the Chancellor of the Exchequer, but what about the taxes we impose on ourselves?

What about the enormous tax on incomes which goes to pay for Drink? And has it ever occurred to you that burning soft coal in open fireplaces adds a great deal to our household expenses?

Suppose the authorities of one of our great cities were to say: We are putting on a new rate, which will cost the inhabitants a million pounds a year. There would be an outcry; there might even be refusal to pay.

Yet the damage done by coal smoke costs Manchester at least a million a year. The extra washing that has to be done on account of the dirt in the air is alone responsible for £250,000.

Everything suffers—health, clothes, furniture, with the outsides and insides of houses, the contents of shops, public buildings, all are damaged by the grime. The Lord Mayor of Manchester sets out these facts in a book he has helped to write, and urges that a determined effort should be made to do away with the smoke nuisance.

HOW THE CAT COMES BACK

THE SIXTH SENSE

Wonder of an Ancient Power
in the Animal World

PROFESSOR'S IDEAS ABOUT IT

By a Scientific Expert

Cats and dogs and birds all have a wonderful homing instinct which helps them to return in a way sometimes miraculous to places where they dwell.

The homing pigeon, as it is called in recognition of this power, is the most familiar example; and bird-lovers can tell you that some of the summer migrants among English birds return year after year from their winter resorts in Spain or Africa to the self-same field or wood where they rested before.

There are innumerable curious facts about the "sense of direction" of birds which have long been studied by the bird-naturalists, notably by Professor Herrick, a very great bird-lover and ornithologist, who showed some years ago that the migrating birds always work to a calendar of their own.

Puss Goes for a Row

Quite lately, Professor Herrick has transferred his studies of the homing powers of birds to those of cats, and has endeavoured to find what it is in a cat that will enable it, when taken several miles away from home, blindfolded, and by roundabout ways, to start in a straight line back again when released.

A cat was taken out in a boat on a lake at night. It presently began to mew, and made its way to the part of the boat nearest to home, and stood there staring through the darkness. So it was then wrapped up in a blanket and put down in the tiny cabin, while the boat was rowed up and down and turned round and round. As soon as the cat was let out again it immediately and infallibly went to the end of the boat nearest to home and mewed for it.

Oldest Sense of All

From this and many other experiments Professor Herrick concludes that it is not the sense of smell that enables the cat to find its way back; nor the sense of sight, for in most of the experiments the cat was blindfolded. Nor could it be the sense of hearing, though a cat's hearing powers are more acute than any other of its senses. If you put a cat in a dark room where a mouse is, the cat never begins by looking or smelling for the mouse, but sits still and listens for the sounds which betray the mouse's exact whereabouts.

It is none of these things that furnishes the homing instinct, says Professor Herrick, but a sense which in animals is older than any of them, though man has largely lost it, and can be called the kinesthetic sense, or sense of movement. Another name for it would be the muscle sense, and it is of sufficient delicacy to register a movement in any direction whenever the animal's body is moved.

The Blindfolded Boy

It is like a movement-recording machine, which will automatically record every movement to the right or left, keep them distinct from movements up and down, never forget any, and be able always at any minute to cast up an accurate account of them.

Whatever direction is given to the position of the animal's body, there is stored up in the memory mechanism an adjusting movement. If a boy were blindfolded and turned round and then told to go back to the place he came from, his muscles and his memory would try to make such an effort, and perhaps would not succeed very well; but the "kinesthetic mind" and the "muscle sense" of a cat seem to work to astonishing perfection.

THE WEEK IN HISTORY

THE ROADMAKER

John McAdam's Gift to the World

FOOLISH MEN WHO LAUGHED

Sept. 17. Tobias Smollett died at Leghorn . . . 1771
 18. Dr. Johnson born at Lichfield . . . 1709
 19. Lord Brougham born at Edinburgh . . . 1778
 20. British captured Delhi from rebels . . . 1857
 21. John McAdam born at Ayr . . . 1756
 22. Dr. Busby, schoolmaster, born at Luton . . . 1606
 23. Wilkie Collins died in London . . . 1889

Few men have made such a mark on the face of the earth as John Loudon McAdam, who was born at Ayr on September 21, 1756. His only possible competitor would be the maker of railways, but no one man can be credited with railways. They were a composite invention. But to McAdam's credit stand the innumerable roads in all lands, infinitely outnumbering the mileage of railways, that are firm and dry, and smooth, for all wheeled contrivances and for the feet of men and horses, because they are macadamised.



John McAdam

The Romans made fine roads from end to end of their mighty empire. Their roads and aqueducts were the most lasting things they made. But two hundred years ago, and less, skill in making roads had been lost. Scarcely any roads as we now know them, and as the Romans knew them, existed. Even in London the only open, convenient route of travel was by boat on the Thames. People were carried in Sedan chairs because they could not go as safely or quickly by carriage.

Early Experiments
 From boyhood McAdam seems to have had the making of roads in his mind, and when he had an estate of his own he started experiments there, and travelled far and wide examining how roads were made, or not made, and thinking how they should be made.

McAdam fixed his attention particularly on the best material for making a sound surface—material that could be readily procured and would wear well, and that could be mended.

While studying all the problems involved in the making of a really good road, he travelled, he declared, 30,000 miles and spent £5000 of his own money. Then he explained the views he had so carefully formed; and nearly all the men who had been making roads, chiefly bad roads, laughed at him.

But in 1815 McAdam was made surveyor-general of the roads in the neighbourhood of Bristol, and soon the roads he made were so much better than the other roads that a Committee of the House of Commons examined the subject, and agreed with his plans.

Like Father Like Son

He was made surveyor-general of roads for the whole country, and received a gift of £10,000 for the benefits his life's work had conferred on the public. He continued his interest in roads till his death in his 81st year, and one of his sons and one of his grandsons followed in his steps as chief surveyors of British roads.

McAdam broke stones, preferably granite, into pieces weighing not more than six ounces and not larger than would pass through a 2½-inch ring, and laid them down without any small binding material, such as gravel, to a depth of from four to ten inches, according to the subsoil. He did not allow much elevation in the middle, but insisted on roadside drainage.

His system has improved roads in all parts of the world where stone is found.

TWO-STOREY TRAINS

How to Get the People to New York

A GREAT CITY PROBLEM

With a population rather larger than that of London, and a business area growing perpendicularly, although it cannot grow horizontally—owing to the river on both sides—New York is faced with the tremendous problem of how to get an ever-increasing mass of workers in and out of the city each day.

Means of access, owing to the situation of New York, are far more difficult than in the case of London. From all directions the city must be approached across the water by bridge or tunnel, and the limit of passengers under present conditions has already been reached.

One traffic expert writes that "it has come to a point where a ride becomes a physical hardship. If nothing is done to relieve this condition it must affect the population adversely in the next generation. It is impossible or impractical today to run more or longer trains; neither can we run the trains any faster."

The crowding on London's underground railway, bad as it is, is nothing compared with New York. How is the difficulty to be solved? The problem has set the cleverest engineering brains of America to work, and an ingenious proposal has been made which would have the effect of doubling the capacity of the underground railway service. It is to run double-decked trains.

No Fear of Overturning

The coaches would be very like our double-decked tramcars, and to enable passengers to board them there would be two platforms at the stations, one above the other, people entering the upper and lower decks simultaneously.

The scheme is said to present no engineering difficulties, and a plan has been worked out for enlarging the subways and tunnels without suspending the present train service.

The type of coach proposed, though carrying a hundred per cent. more passengers, would not be more than 25 per cent. heavier, and the cost of hauling these larger cars would be very little more than that of the present service. There would be no danger of overturning, for, the weight being at the bottom, the cars would not be top-heavy.

THE MOON NEXT WEEK



The moon at 7 a.m., summer time, on Sept. 17

DID SHE?

From a Correspondent

A child had spent a very bad day with its temper—a very bad, black day indeed. So bad had that day been that in a frenzy of fury she had seized upon her favourite doll and flung it into a corner.

But evening brought calm, and when she had finished her prayer at her mother's knee she looked up very quietly, and asked this wonderful question: "Mummy, did I throw my doll at Jesus?"

C.N. QUESTION BOX

Little Puzzles in Natural History

Answered by Our Natural Historian

All questions must be asked on postcards, and not more than one question on each card. Name and address must always be given.

Is there a Special Name for Young Turkeys?

Young turkeys are called poults, but the same name is applied to the young of game birds and of common poultry.

What Becomes of the Shells of Eggs from which Caterpillars are Hatched?

Some remain after the hatching, but many species of caterpillars eat the shells from which they emerged.

Where do Weasels Make Their Home?

Sometimes a nest of grass and leaves is formed in an old rabbit burrow, but generally the home is in a wooded bank or beneath the roots of a big tree.

Can a Thrush Hear Worms in the Ground?

There can be little doubt that this bird's keen sense of hearing does enable it to detect the movements of worms in the ground which it cannot see.

Do Spiders Possess Hearts?

The spider has a heart, which is a muscular tube buried in the substance of the liver and situated, not in the throat or chest, but in the upper part of the abdomen.

What is the Cause of Fowls losing their Feathers when not Moulting?

The agency at work is, as a rule, a number of parasites, called birds'-feather mites, which eat the feathers of the unfortunate birds.

What are the Flies Which Attack Caterpillars?

The chief enemy of the caterpillar among flies is the ichneumon, which lays its eggs in the grub, and so prevents it from becoming a moth or butterfly.

What Causes Scales on Chickens' Feet?

The unnatural thickening of the scales on the feet and legs of poultry is due to the presence of parasitic mites, and is best treated by antiseptics sold by vendors of poultry requisites.

Is it True That When a Wolf Loses its Mate it does not Mate Again?

It is impossible to prove such a statement, for wolves form packs in winter, and we cannot know if the couples which leave such packs in the spring are the same as those which joined months earlier.

How do Weasels and Stoats Differ?

The stoat is about eleven inches from the nose to the root of the tail; the weasel only about 8 inches. In colour the two animals are not unlike. The stoat has the larger eye; and the tail, black at the tip and plume-like in this animal, is shorter and rougher in the weasel.

Do Dogs Require More Sleep Than Human Beings?

An average dog, living in a house or a kennel, certainly gets more sleep than a man. It lacks the man's mental activity to keep it awake, and its habit of swallowing its food without first masticating it renders rest for the process of digestion necessary.

Do Rabbits Eat any Poisonous Herb Besides Belladonna?

No one knows the limits of a wild rabbit's appetite when hunger pinches during a severe winter or serious drought, and it would need a special investigation to say what growths, fatal to other animals, are innocent to these rodents.

Newspaper Notes and Queries

What does Nem. Con. mean? It is an abbreviation of the Latin nemine contradicente, no one contradicting, and means unanimously.

What does Aphelion mean? The point on the orbit of a planet or comet most distant from the sun. The opposite point, nearest to the sun, is called Perihelion.

What does Sub Rosa mean? In strict confidence; secretly, privately. Literally it means "under the rose," that flower being the emblem of silence which Cupid gave to Harpocrates, the god of silence.

NEXT THURSDAY'S ECLIPSE

WILL EINSTEIN'S THEORY BE PROVED TRUE?

Elaborate Preparations of the World's Astronomers

WATCHING TO SEE LIGHT BEND

By Our Astronomical Correspondent

A great event in the astronomical world will occur in the early morning of Thursday, September 21: it is the long-anticipated eclipse of the Sun, which, it is hoped, will decide beyond doubt the much-discussed question of the bending of light in its passage past the Sun.

Few of the world's inhabitants will be able to see the eclipse in its totality, which is the only aspect of it that is of any consequence, because the narrow path of its shadow begins on the edge of East Africa, near Somaliland, then sweeps across the Indian Ocean and the northern and sparsely-populated part of Australia, and ends in the Pacific, North of New Zealand. We in Britain will not get a glimpse of it.

A Delicate Experiment

Enthusiastic astronomers have made long voyages to favoured localities on the line of totality. The place chosen by the official British expedition from Greenwich Observatory is Christmas Island, 200 miles south-west of Java. Here, remote from all disturbing influences, it is hoped to settle this most controversial question, the supposed "bending of light," which is so closely associated with Professor Einstein's theory of Relativity. The experiment is of extreme delicacy, and if a wisp of cloud, or even haze, covers the eclipse area during the three and two-third minutes of total obscurement, then the purpose of the expedition will be frustrated.

Together with several other instruments, a large astrophysical telescope, having a lens 13 ins. in diameter, has been erected, and photographs taken with it at night of the exact place where the Sun will be on September 21. This had to be done months before the eclipse, to get the exact position of the stars in that area before the Sun arrives there.

Months of Preparation

Beta in Virgo, the Virgin, is very near to where the Sun will then be, being only the Sun's width above and to the right of him. But the smaller stars, of which there are several, not too faint, are best suited for the purpose.

On this occasion the faint light of the sun's corona will be present, and also a dark twilight effect, so the experiment becomes one of great delicacy; it is also one involving the most minute adjustment and accuracy. For instance, on the photograph the eclipsed Sun will appear as a dark disc, from one to two inches in diameter; for about another inch the faint streamers of the corona will appear barely perceptible; then, beyond, some half-dozen tiny stars, looking like white dots, about a thirtieth of an inch in diameter.

These same stars will be on the photograph taken months before, but in company with many smaller ones and without the dark eclipse disc in their midst.

Star's Apparent Move

Now, if the experiment confirms the theory of light bending, the few stars on the "eclipse plate" will appear to have moved outward from the dark disc of the eclipsed Sun; the amount is exceedingly minute, and will appear on the photograph little more than the diameter of a full-stop. It will vary and get very much less the farther the star is away from the black disc.

At the Sun's edge the apparent shift of the star caused by its light bending is, according to Einstein's theory, one and three-quarter seconds of arc: this is about one-thousandth part of the apparent width of the Sun.

G. F. M.

THE HOUSE OF SILENCE

A School Story
With a Mystery

Told by T. C. Bridges,
the C.N. Storyteller

What Has Happened Before

Raymond Cartwright, a rather frail small boy who has never been to school before, is a new-comer to the Fourth Form at Charminster. He is befriended by a sturdy little lad named Jimmy Clayton.

During a chemistry class Arden, a bullying fellow, is the victim of a practical joke by Clayton, who is kept under detention for an hour. Meanwhile Arden and two of his friends, Bulmer and Hogan, capture Raymond and let him down a dry well in the bucket.

At dusk, when Arden and his friends decide to haul Cartwright out of the well, they find the bucket very heavy, and suddenly the bullies are terror-stricken by a tall, white-shrouded figure that leaps at them from the mouth of the well.

When he was released from detention Jimmy went to rescue Raymond, but was surprised to see him running away from the school. After a chase he caught up with him, and together they returned, to find the gates locked.

CHAPTER 5

Jimmy Uses His Wits

"We shall have to go before Dr. Fawcett!" repeated Ray, turning pale.

Jimmy Clayton glanced at Ray and saw how scared he looked.

"It's all right, Cartwright," he said. "I don't suppose he'll lick us; only he'll want to know how we got out and what we were doing. The Head's a decent old bird; we'll have to tell him some of the story."

"Then I should have to tell him about the well!" said Ray, looking more unhappy than ever.

"No; you can't sneak, Cartwright. That's not cricket, even about a swab like Arden. You'll have to say that we went for a walk, and didn't remember how late it was." He pulled up short. "I say, you never told me how you got out of the well!" he exclaimed.

"By the passage under the wall."

"Passage under the wall!" Jimmy was all excitement. "My hat! You don't mean to say there's a secret passage?"

"Yes," said Ray simply. "There's a sort of bricked culvert. When they let me down in the bucket I found myself hanging just opposite the hole. It was easy enough to climb out of the bucket and get through."

"Where did it come out?"

"In that big, dry ditch outside the wall. You wouldn't notice the mouth, for it's all grown over with nettles and brambles."

Jimmy whistled softly.

"What a find! But see here, Cartwright, if you could get out, we can get back the same way!"

"Yes, we could get back into the well," answered Ray. "But how should we get up to the top? I don't think that we could climb the chain."

"We don't have to. Those chaps will be sure to come and pull you up before tea. They won't risk your being missed."

Ray shivered.

"But then they'd get hold of me again!" he stammered.

"Oh, don't be so scared!" returned Jimmy impatiently. "But next moment he was sorry. 'Don't you worry; I'll go up first!'" he added quickly.

"No!" said Ray firmly. "That won't do at all. You know that Arden is *aching* to catch you. He's got a bigger grudge against you than against me."

Instead of looking dismayed, Jimmy suddenly began to chuckle. Ray gazed at him in amazement.

"It's all right," grinned Jimmy. "I've got a notion for scoring off the lot of them. Oh, a topping idea! But come on—quick! We sha'n't have too much time to work it."

He started running as he spoke, and in a few minutes they were

back in the broad ditch under the old wall, where Ray showed Jimmy the entrance to the culvert.

"Topping!" said Jimmy. "You wait here; I've got to fetch something. I sha'n't be two twos."

Much wondering, Ray stood waiting, while Jimmy darted off. He went to the right, in the direction of the Headmaster's garden. To the left, a little way off, there stood, among thick trees, an old house. When he had first got out Ray had been too flustered to notice it, but now he found himself looking at it with a sense of pleasure.

Ray had a love for beauty unusual in so young a boy, and this old house, with its red-tiled roof, tall, twisted, red-brick chimneys, and the thick ivy clinging to its walls, was very beautiful.

He was still gazing at it when Jimmy came racing back, carrying a bundle under his arm.

"What is that old house, Clayton?" asked Ray.

"That? Oh, the old Manor House!" Jimmy answered. "Yes, it's a queer old place; it's been empty for years. They say it's haunted, but never mind about that now. Look what I've got."

As he spoke he unfolded a big sheet. "Mrs. Dawkes lent it to me. She's the gardener's wife, a decent old soul."

"But what's it for?" asked Ray.

"Why, to scare Arden, of course!"

"To dress up in; you mean?" asked Ray.

Jimmy grinned.

"Rather! Oh, we're going to jape with the gentle Arden! We're going to put the wind up him properly!"

CHAPTER 6

Safety!

RAY began to feel a thrill of excitement as Jimmy rapidly opened out the sheet. Then, carrying it and a stick, Jimmy scrambled into the mouth of the opening, with Ray close behind.

The culvert was about a yard wide and not quite that in height. The brickwork was still fairly sound, and Ray saw that it had been made to take the overflow of the old well out into the moat. As they scrambled along it Ray noticed another passage, opening on the right, that he had not seen before. He wondered where it led. But Jimmy was in such a hurry that he never spotted it; and Ray, of course, had then no time to investigate.

Presently the two were standing together on a ledge projecting from the side of the well.

"Good business!" whispered Jimmy. "The bucket's still here. They haven't come yet."

"But they're coming," answered Ray, in an equally low tone. "I can hear steps."

"You've got jolly good ears!" said Jimmy. "Quick, now; help me on with the sheet!"

Then a fresh idea seized him. "Here, stack some of those loose bricks into the bucket. Make 'em work to wind it up; they'll wonder what they've got hold of."

Ray worked like a Trojan, piling bricks into the bucket, and all was ready just as they heard Arden shouting down from above.

Ray's life up to coming to Charminster had been a very quiet one. He positively shook with excitement as he saw Jimmy, looking ghostly in his white robe, being slowly raised in the bucket. It seemed to him an endless time before he suddenly heard Arden's shriek of terror, and next moment down came the bucket, banging and rattling, the chain running out with a fearful clatter.

For a moment Ray was scared stiff, for he fully expected to see Jimmy precipitated to the bottom of the well. But not a bit of it. Jimmy knew a trick worth two of

that, and as Hogan and Bulmer let go of the windlass he had leaped for the edge of the kerb and caught it.

Ray heard Jimmy give two or three hideous howls; then the clatter of running feet died out, and Jimmy's voice, choked with mirth, came from above.

"Done the trick, Cartwright!" he gurgled. "Scared 'em out of at least seven years' growth! Oh, hold me, or I shall burst!"

"Don't do that! Pull me up!" answered Ray.

Jimmy wasted no time, and soon Ray was safe on firm ground. Jimmy had rolled his sheet up.

"Now we've got to clear," he said. "They'll smell a rat, of course, but they must never know what happened. You'll keep your mouth shut, Cartwright?"

"Of course I will. I'll never say a word," replied Ray earnestly. "Nothing shall induce me."

Jimmy chuckled.

"You needn't make such a song about it. I know you'll keep mum. Come on now. What luck that well passage saved us having to come through the gates! If we can get to the dining hall without being spotted we're all right."

The two were safe in their places before Arden and company came in. Ray hardly dared to look up, but Jimmy stared brazenly at the bullies. Then he turned to his companion with a grin of joy.

"Did you see their faces? Oh, did you spot the way Arden looked at you? Talk of registering surprise, why, it beat any kinema I ever saw. Tell you what, Cartwright, they'll think twice before they monkey with us again."

"I'm sure I hope so," replied Ray. "I don't want to have anything more to do with them."

CHAPTER 7

Ray Keeps His Word

THE rest of the evening passed off quietly enough, and next day Ray found, to his surprise and delight, that Jimmy and his pal Bob Dane were both disposed to be really friendly. Ray had never had a boy friend, and his very delight kept him silent and awkward.

After morning school the other two suggested a visit to the tuck shop.

"Thanks," said Ray uncomfortably. "But I think I won't come, please."

Jimmy looked distinctly surprised.

"Why not?" he demanded.

"I—I can't afford it," stammered Ray.

There was an awkward pause.

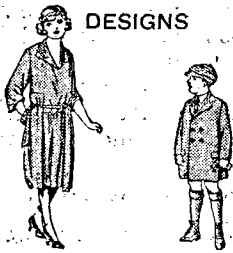
"All right," said Jimmy at last. "Then you won't mind if Bob and I go?"

"N-no. Of course not," said Ray.

The two went off, and when they had turned the corner Bob spoke.

FREE

PATTERNS FOR FIVE
DESIGNS



Tell mother not to miss the splendid October number of "Children's Dress," now on sale. Patterns to make a Frock and Coat for the Schoolgirl, a Suit and Coat for the Schoolboy, and a Tunic Suit and Coat for the small girl and boy are GIVEN FREE inside every copy

HARMSWORTH'S
CHILDREN'S
DRESS • 4½D.

"Rum kid; that! I thought you told me his father was rich, Jimmy."

"He ought to be," answered Jimmy. "He's a big pot in the Diplomatic Service."

"Then why hasn't Cartwright got some tin? He can't have spent all his beginning-of-term money."

"Don't know, I'm sure."

"Sounds to me as if he were stingy," said Bob.

Jimmy did not answer. After all, he had to admit to himself that he knew next to nothing about young Cartwright.

Ray meantime wandered off alone. What he had said was quite true, but he had not told the others the reason why he was so hard up. Now he wished he had, for it was bitter indeed to lose friends when he so badly needed them. Feeling more sad and lonely than ever, he walked out across the playing-field, climbed a stile, and found himself in a path leading down beside a hedge into the water meadows. He was mooning aimlessly along when, without the slightest warning, two boys jumped out from behind the hedge and caught hold of him.

"Hang on to him tight," came Arden's hated voice.

Ray's heart sank to his boots when he found that once more he had fallen into the hands of his enemies. But he could do nothing, and was dragged away into the cover of a clump of trees near the water.

"Now," demanded Arden viciously, "how did you get out of that well last night? Who helped you?"

Ray's lips tightened. He made no reply.

"Sulky, eh?" said Arden, glowering at him. "Listen to me, you little brat. We don't allow kids like you to play games with their elders, and we're here to make you talk. Are you going to tell or are you not?"

"No!" said Ray briefly.

Arden caught him by the arm and gave it a sharp twist. The pain was so great that Ray quivered all over.

"Now will you tell?" asked Arden.

"No!" snapped Ray.

Another twist. Ray felt as if his arm would break, but he did not utter a sound.

Hogan interfered.

"Don't damage him, Arden. I know a trick worth two of that."

Arden slackened his hold.

"What do you mean?" he asked sourly.

"Give him a ducking."

"Put him in the river, eh?"

"That's the ticket. I'll lay that will make him talk."

Bulmer laughed.

"Jolly good notion," he said. "The water's pretty cold, too."

Arden, holding Ray by the collar of the coat, swung him round.

"Do you hear what Hogan says? If you don't own up to what happened last night, and tell us who your pal was, we'll chuck you in."

Ray's face was as white as paper, but he remained obstinately silent. He had given his promise, and nothing that anyone could do would make him break it.

"Sulky, are you?" growled Arden. "All right, my son. You'll shout loud enough before we've done with you. Bring him along, you chaps."

Hogan and Bulmer caught Ray and hauled him toward the river, which here was fully fifty feet wide. It was deep, too, and the greenish water looked bitterly cold.

"This is your last chance, Cartwright," said Arden grimly. "If you don't speak out, in you go. Who was it got you out of the well last night?"

Ray looked at the chill water and shivered slightly. Then he turned to Arden, and, though his face was white, his eyes were brave.

"You can drown me if you like," he said, "but I won't tell."

Arden's eyes flamed with rage.

"In he goes!" he said furiously.

The other two seized Ray, lifted him, and swung him off the ground. Next moment he went sailing through the air, to fall with a tremendous splash into the water.

TO BE CONTINUED

Who Was He?

A Great Frenchman

IN the town where Joan of Arc suffered death there was born, 175 years later, a boy who was to become his country's greatest writer of tragedy.

His father being a lawyer he was trained for the same profession, but, having no liking for the law, he set out for Paris, taking with him a comedy that he had written some time before and had already produced on the stage at Rouen. Though not a great work, it was much better than the plays usually appearing at that time, and it became a great success.

Other plays followed, and he was engaged to write poetry to order by a great statesman who then dominated France. The author, however, was too independent to follow instructions, and lost the favour of the statesman, who became his enemy.

About this time he wrote his first tragedy, and followed this with another that took Paris by storm. The great statesman paid other writers and critics to condemn the play, but nothing could shake public opinion as to its merit, and so the statesman persuaded the French Academy to conduct a critical examination of it in the hope that that august body would condemn it.

After five months' consideration the Academy gave its decision, and, while censuring some things in it, praised the beauty of its scenes. Eleven years later the author was elected a member of the Academy.

Plays now followed one another rapidly, but all were not of equal merit. The writer was a master of tragedy, but he also wrote comedies, and has been called the Father of French Comedy.

Though a great writer he was poor company and spoke very little, so that he obtained a reputation for melancholy, and was not very fitted for the gay French capital. When he was 34 he married and went to live in Rouen, and there he remained for the next 22 years.

Then he returned to Paris, but his popularity began to wane, for a young poet, with a more graceful though less powerful style and inferior as a dramatist, took the public fancy.

All through his life the tragic author was of a pious disposition and proved a good husband and father and a faithful friend. His worth and integrity were generally recognised, and it is to his credit that association with the court and the favour of the king never led him to cringe.

Altogether he wrote 30 tragedies and comedies; and his work was greatly admired by the English poet Dryden, who lived at the same time.

He died in Paris at the age of 78. Here is his portrait; who was he?





The Poetry of Earth is Ceasing Never



D! MERRYMAN

THE conceited young man imagined that he had a good voice, but his listeners had their doubts on the subject.

After singing one or two songs he asked, "Shall I sing Tosti's Good-Bye?"

"Why not say it?" queried one who had had enough.

The Patrol Leader's Problem
SOME Boy Scouts intended to build a temporary bridge over a small stream, so the patrol leader used an eighteen-foot pole to test the depth of water and mud.

"How deep is the mud?" asked one of the Scouts.

"Well," replied the patrol leader, "the pole is twice as deep in water as it is in mud, and twice as much above both as in water and mud together."

How deep was the mud?

Answer next week

A Missing Hiss
THERE was an old lady of Diss Who was careless and rather remiss; She kept a pet snake, Which went out by the gate, And escaped from the house with a hiss.

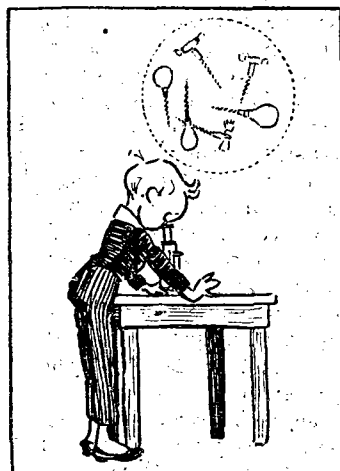
Why were Bulwer Lytton and Charles Dickens the two most industrious authors who ever lived?
Because Lytton wrote "Night and Morning" and Dickens edited "All the Year Round."

Do You Live at Sevenoaks?
THIS name is probably a reference to a sacred group of seven trees forming a boundary mark in ancient times. The surname Snooks is derived from Sevenoaks, and was no doubt first given to a person who lived or came from there.

Tastes Differ
MOLLY'S famished little tabby Lapped her milk and quenched her thirst, Ate her fish, and, choking, murmured, "Bones, of all things, are the worst!"

Molly's hungry little Towser Ate his dinner, said with zest: "Biscuit's good, and scraps are better, But, of all things, bones are best!"

School Howlers



A Drop of Blood

AFTER the physiology lesson, in which the teacher had described the corpuscles of the blood, a boy wrote: "The blood has two sorts of corkscrews—the red corkscrews and the white corkscrews."

Why is the E the most unfortunate of letters?

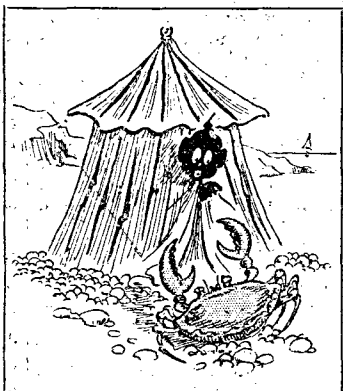
Because it is never in cash, always in debt, and never out of danger.

What Name Is This?

HER initials begin with an A;
An A's at the end of her name;
The whole of her name is an A,
And 'tis backward and forward the same.

Answer next week

The Brownie Bather



SAID this poor little Brownie, "Oh dear, It's no wonder I tremble with fear. On this terrible shore There are crabs at one's door, And they nip people's toes, so I hear!"

Why is a washerwoman like a big ship?
Because she draws much water.

Built-up Words
A TWO-LEGGED creature, a box, and two-thirds of ear give a Lancashire city.
A useful implement and the man who uses it give a London borough.
Fifty and a bridge make a tree.
A plan and a simple French word of two letters give a tree.

Solutions next week

Nature Notes of Mildred and Mary The Spider

UPON the rhododendron, Where bends the Clay-Lake Road, Old Rosalind has woven A gossamer abode. She is a great brown spider; And she's just eaten four Enormously big buzzies, And can't eat any more. And now her web she's mending, With all the time an eye Upon a daddy longlegs Serenely dancing by. Old Rosalind will have him, Oh, stupid little thing! And weave a shroud around him, And bind him leg and wing; Then to her hidden larder, Up, up the silken way, She'll bear poor daddy longlegs To eat another day.

Simple Arithmetic

CYRIL'S aunt had given him three apples for himself and his sister Dora.

Meeting Cyril later, his aunt asked him if he gave two of the apples to Dora.

"Oh, no, Auntie!" he replied. "They would not come out even, so I ate one first and divided the rest."

A Change of Diet

THERE was an old fellow of Eye Who ate nothing but puddings and pie; Said a friend in the street, "Why don't you eat meat?" And he answered, "I think I will try."

ANSWERS TO LAST WEEK'S PUZZLES

Fred's Birthday Present Ten shillings

What Are They? Snug, guns

Do You Live Here? Seaton

Jacko Loses His Ticket

OF course Jacko lost his ticket. It was only what he might have been expected to do.

Joe very naturally thought, when he bought the ticket and gave it to him, and saw him safely into the train, and watched it go puffing out of the station, that the young rascal was as good as home.

But he wasn't, not by a long, long way.

Before he had gone a mile he missed his ticket. He suddenly realised that it wasn't in his hand. It wasn't in any of his pockets when he searched them, and it wasn't in the carriage. So he came to the conclusion that it must have fallen on to the line when he leaned out of the window to wave good-bye to Joe and Belinda. Which, as a matter of fact, was precisely what had happened.

"Well, it's gone, and I can't help it," he said to himself. "They can't murder me for it."

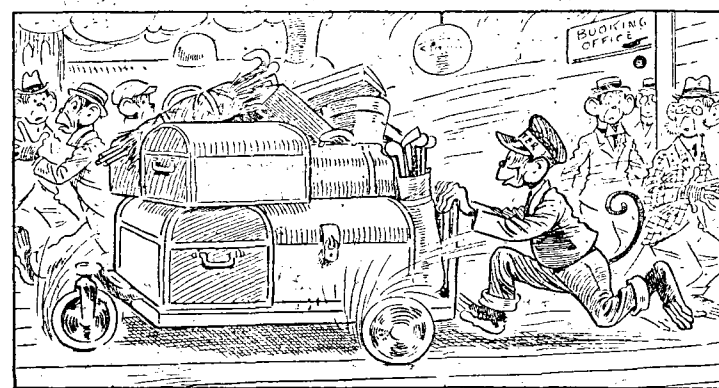
They didn't try, but they weren't particularly sympathetic when he told his tale, and they turned him out at the first station they came to.

Jacko didn't care, for it happened to be a big junction and there was lots going on, and plenty to amuse him.

He hung about watching for quite a long time, and then, all at once, while he was poking round, he caught sight of a porter's cap and jacket hanging up on a peg just inside an open door.

Quick as lightning he took them down and put them on.

As he went off, chuckling to himself, somebody grabbed him by the arm and swung him round. It was a passenger.



"A porter's life is the life for me!"

"Here, porter!" he cried. "I've got some luggage. Look slippy! I want it put on a taxi!"

Jacko grinned harder than ever, and was catching hold of the biggest trunk when the man stopped him.

"You can't carry that, you juggins!" he cried. "Get a trolley!"

Jacko dropped the box with a bang.

"A trolley! Right-o!" he said cheerfully.

He hadn't the faintest idea where to find one, but his luck was in, for there was the very thing, only a yard away, with a big packing-case on it.

Jacko pounced on it, tipped it up, shot the case off, and ran it back with a mighty clatter to the pile of trunks.

They were pretty heavy, and it took him all his time to move them, and then the man had to help him.

"You're a little chap for a job like this," he said good-naturedly when it was all over, and the taxi was safely loaded up. "Here's half-a-crown for you."

Jacko's eyes nearly fell out of his head.

"Good egg!" he exclaimed. "By Jove, a porter's life is the life for me!"

"Who's taken my trolley?" interrupted an angry voice.

"But I think," murmured Jacko, darting into a subway, "that I'll try another platform."

The paragraph on the right is a French translation of the paragraph on the left

To See the Moon Rise

The Rev. G. R. Rawlings, headmaster of a boys' school at Osaka, has been telling of the charming manners of the Japanese, and of their politeness, which he thinks is unequalled the whole world over, and their love of beauty.

In Japan, he says, there are excursions by rail and road to coast places where the rising of the moon can be viewed amid beautiful scenery; and people go regularly to gaze on this spectacle with just as much earnestness as we should show when going to see a play.

Pour Voir le Lever de la Lune

Le révérend G. R. Rawlings, proviseur d'une école de garçons à Osaka, décrit les mœurs charmantes des Japonais, leur politesse, qu'il croit être sans rivale au monde, et leur amour du beau.

Il dit qu'au Japon il y a des excursions en chemin de fer et par route au bord de la mer, où l'on peut observer le lever de la lune dans un paysage ravissant; les gens vont régulièrement contempler ce spectacle avec autant d'ardeur que nous mettons à aller au théâtre.

Tales Before Bedtime

Sandy

JACKY was very lonely. He had no brother or sister, no one at all to help him to build sand castles and sail boats, like the other children on the shore. It was very dull digging and paddling and picking up shells all alone.

"I'm sure those boys over there would let you play with them," said Mother; but Jacky was too shy to make friends.

One morning he began to dig a deep hole in the sand. It was so deep that when Mother wanted him to come home to dinner she had to look everywhere because he was hidden so far down in the hole.

"It's the deepest hole on the shore," cried Jacky. "Oh dear! I do wish I hadn't to leave it."

"Never mind," said Mother. "It is such a splendid hole I am sure everyone will want to play in it. Perhaps, when you come back you will find a little friend in it, and not be lonely any more."

Jacky cheered up wonderfully when he heard this, and he could hardly wait to eat his cherry-pie and custard before he rushed back to the shore.

There was nobody about; and Jacky gave a sigh of disappointment because he felt sure he was not going to find a friend in the hole after all.

He peeped in and gave a jump. At the very bottom sat a little white figure.

It was not a boy, because boys don't bark, and it was not a girl, because girls never have four legs! It was a little rough-haired terrier; and when Jacky jumped into the hole it barked



Jacky is never lonely now

and frisked, and licked him in the friendliest way.

It wore no collar; and Mother said it was a "stray," so when tea-time came she and Jacky took it to the police station. A nice policeman said it must stay there three days in case its real master should come to look for it.

But nobody ever claimed it, so it became Jacky's own dog; and, of course, he called it Sandy, because it was found in the deep, sandy hole.

Jacky is never lonely now, for Sandy is the jolliest playfellow and friend in the world.

The Children's Newspaper grew out of My Magazine, the monthly the whole world loves. My Magazine grew out of the Children's Encyclopedia, the greatest book for children in the world.

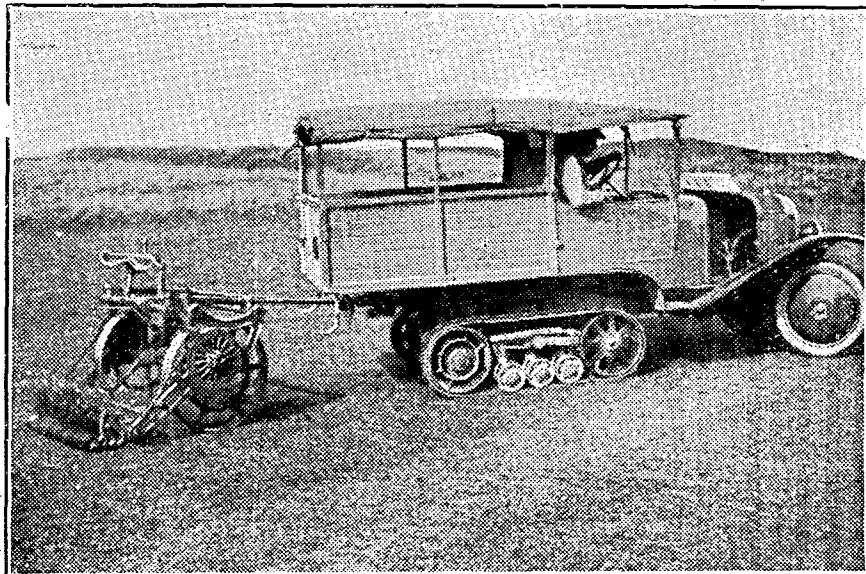
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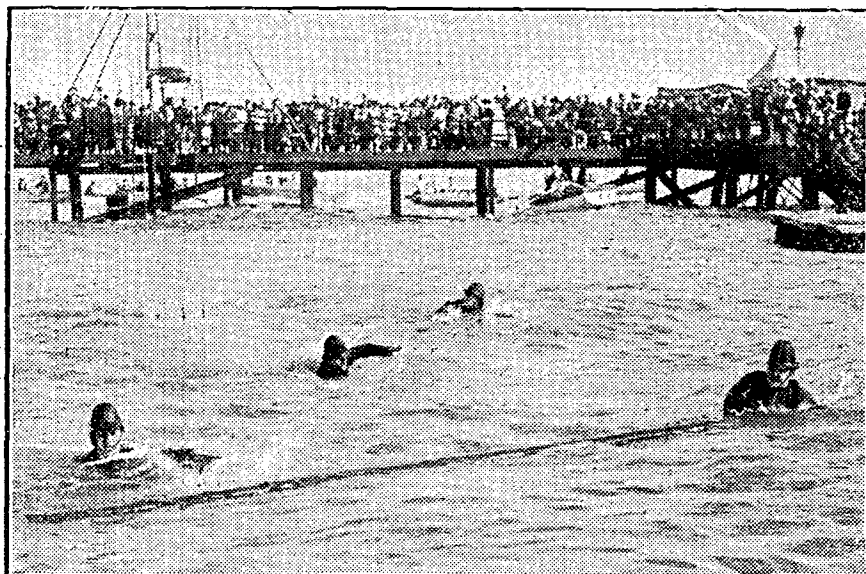
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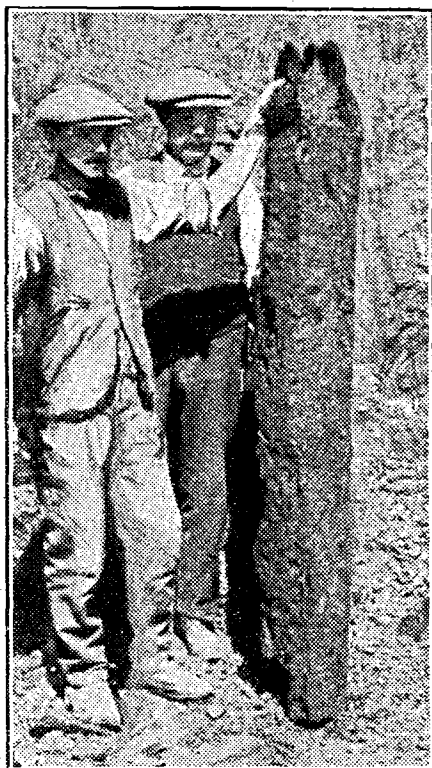
CATERPILLAR GRASS-MOWER • DOG THAT COLLECTS EGGS • BEARS AT PLAY



Caterpillar Grass-mower—The large golf course at Dieppe, in France, is now mown and rolled by a vehicle that is a combination of the caterpillar tractor and the motor-car.



Policemen Swim in Uniform—Every policeman is a potential life-saver, and here we see a number of constables at Brighton engaged in an exciting swimming contest in full uniform.



A Bit of Old London—While engaged recently in extending a London bank workmen unearthed this post, to which it is believed by experts the Romans moored their boats.



London Bears at Play—The Polar bears at the London Zoo love to gambol in the water, to the great delight of their human visitors, some of whom were particularly interested in this friendly wrestle that took place on a warm day recently. These bears are quite happy in their comfortable quarters in London, where they live under fairly natural conditions.



A Good Catch—The pelicans in St. James's Park, London, are great experts at catching the fish thrown to them by the park-keepers. One of these birds is making a good catch.



A Dog that Collects Eggs—This intelligent spaniel has been trained by an Arbroath farmer to collect all the eggs that his hens lay outside the fowl-runs. It also retrieves straying fowls.



Flax-Pulling by Machinery—Testing a Canadian flax-pulling machine in Ireland, where one of the leading industries is flax-growing. Flax must be pulled when gathered, not cut.

ALL THE WORLD LOVES THE C.N. MONTHLY. ASK FOR MY MAGAZINE. EDITED BY ARTHUR MEE

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